Allotment Assessment
Antelope Springs

I. Name and Number of Allotment

Antelope Springs Allotment #01096
Permittees: C.E. Brackett Cattle Company and Guerry, Inc.

II. Livestock Use – C.E. Brackett Cattle Company

Livestock Number & Kind	Season of Use	Percent Public Land	AUMs
750 cattle	4/1 to 6/30	96	2,154
750 cattle	7/1 to 10/30	54	1,624
750 cattle	11/1 to 1/30	96	2,154
25 cattle	11/1 to 11/30	100	25

According the Jarbidge Resource Management Plan (RMP), the season of use in Antelope Springs Allotment is variable. In spite of the permitted season of use described above, the permittee typically grazes livestock year-round on the Allotment.

1. Preference: 5,965 AUMs
2. Historic Use Range for years 1990 to 2002: 4,252 to 8,668 AUMs
3. Suspended Preference: 0 AUMs

Livestock Use – Guerry, Inc.

Livestock Number & Kind	Season of Use	Percent Public Land	AUMs
2,430 sheep	6/1 to 6/5	100	81

1. Preference: 81 AUMs
2. Historic Use Range for years 1990 to 2002: 54 to 141 AUMs
3. Suspended Preference: 0 AUMs

Total Livestock Use

1. Preference: 6,046 AUMs
2. Historic Use Range for years 1990 to 2002: 4,384 to 8,722 AUMs (In one year.)
3. Suspended Preference: 0 AUMs

III. Allotment Profile

1. The Antelope Springs Allotment is located in the southeast part of the Jarbidge Field Office Area. The southern half of this allotment (45%) is located in MUA-15 while the northern half of this allotment (55%) is located in MUA-13. There are ten pastures in this allotment. The current permit to C.E. Brackett Cattle Company was issued on February 21, 1995 authorizing 5,965 AUMs. This permit is valid until February 28, 2005. The current permit to Guerry, Inc, was issued in 1995. This permit is valid until February 28, 2005.
2. Federal Acreage: 45,966 acres
3. MUA Objectives (Jarbidge RMP, 1987):
    - Issue 20,169 AUMs forage for livestock in MUA-13 and 26,466 AUMs in MUA-15 by the year 2005 (II-50, II-56). Antelope Springs is 26% of MUA-13 and 11.5% of MUA-15. This increase use would result from the availability of additional forage from water developments, brush control and seeding projects and improvement in native range condition (II-3).
    - Maintain 47,510 and 24,159 acres existing vegetative improvements (II-50, II-56).
    - Improve 48,396 and 36,207 acres lands in poor ecological condition (II-50, II-56); Antelope Springs was noted as having 14,326 acres in poor condition.
    - Manage big game habitat in MUA-13 to support 175 mule deer (40% increase) and 50 antelope (100% increase) (II-50); manage big game habitat in MUA-15 to support 2400 mule deer in winter (100% increase), 1285 mule deer the rest of the year (29% increase), 1170 antelope (30% increase), and 56 bighorn sheep (up from 2); and protect crucial winter big game habitat (II-56).
    - Improve 4900 acres of big game habitat by 2005 in MUA-15 (II-56).
    - Maintain present areas of sage grouse nesting habitat in MUA-13 (II-50).
    - Maintain current condition of riparian habitat and fisheries habitat in MUA-13 (II-50) and in MUA-15 improve 4.7 miles of fisheries habitat and 9.6 miles of riparian habitat by 2005 (II-56).
4. Key Forage Species:
    - Crested wheatgrass in seedings
    - Thurber's needlegrass, squirreltail, and Sandberg's bluebrass in the northern or middle areas
    - Bluebunch wheatgrass in the middle and southern areas
    - Idaho fescue in the southern half.

5. Grazing System: The grazing use for C.E. Brackett Cattle Company in the Antelope Springs Allotment is outlined in the Livestock Management/Grazing Plan dated November 8, 1993. This Plan discusses 10 pastures, however, a proposed division fence was never constructed, and there are actually nine pastures in this Allotment. The livestock in the Allotment are managed as one herd. Pastures within the Allotment are: (1) The Point, (2) Secret Cabin, (3) Salmon Falls, (4) Cedar Creek Crossing, (5) Salmon Falls 2, (6) West of Ranch, (7) South of Road, (8) Monument Springs, and (9) Beaver Meadows. There is also a Riparian Pasture that is used for a short time in the early spring/late summer.

   Pastures 1 and 3 are used as winter range. A large percentage of these pastures are crested wheatgrass. Livestock normally begin using these pastures in November. No livestock remain on winter range (seeded areas) once spring green-up begins. Estimated dates that livestock leave winter range are approximately February 28 to March 15.

   Pastures 2, 4, 5, and 6 are used as spring range. Use is rotated between two of these four pastures during the spring of each year. Two pastures receive complete rest each year, while the other two pastures are alternately deferred for spring use in the years they are scheduled. Approximate dates that spring range use is initiated are March 15 to April 1, or when range readiness occurs. Livestock also use the spring-grazed pastures for a short time in the fall as they trail back to their winter range. Approximate fall use is from October 15 to October 31. A Riparian Pasture is used for a short time in conjunction with the spring range.

   Pastures 7 and 8 are used as late spring/early summer range and are used each year as livestock move up to their summer range, and again in the fall, as livestock move back to their winter range. Livestock approximately move into these pastures between May 15 to June 15, and use these pastures until approximately July 1 to July 15. As livestock trail back to their winter pastures, Pastures 7 and 8, are used again from approximately October 1 to October 31.

   Pasture 9 is summer range which is comprised of private, state, and federal land. Livestock enter this pasture approximately July 1 to July 15 and leave in the fall from approximately October 1 to October 20.

   All move dates are estimates. Actual moves may be determined by percent use of available forage, i.e., 50% of native grass species, and 60 to 65% of crested wheatgrass seedings.

   This 1993 Grazing Plan, which is currently being followed, describes year-round grazing use in the Allotment. This year-round grazing system is counter to the season of use outlined in the 1995 term permit.

Guerry Inc., trails/grazes one to two bands of sheep usually through parts of the allotment in early June.

IV. Management Evaluation

The purpose of this evaluation is to determine the allotments status in meeting the Standards for Rangeland Health and Guidelines for Livestock Management and to renew the grazing permit with management guidelines to meet these Standards.

A. Summary of Studies Data

1. Actual Use

Table 1 shows actual use for years 1990 to 2002.

Table 1 - Actual Use

Grazing Season	AUMs (Brackett)	AUMs (Guerry)
1990	6,472	81
1991	6,489	88
1992	5,607	81
1993	4,252	132
1994	5,136	97
1995	5,550	139
1996	6,781	80
1997	7,693	139
1998	7,659	81
1999	8,668	54
2000	7,309	61
2001	5,969	141
2002	5,949	144

2. Climate

The 10-year average annual water year precipitation for the BLM rain gauge station at **Cedar Mesa** is 11.5 inches and for the **Monument Springs** rain gauge station is 26.6 inches. The Cedar Mesa station, at 4,700 feet, represents the lower elevations and northern areas of the allotment while the Monument Spring station, at 7,150 feet, represents the higher elevations and the southern areas. The middle elevations of the allotment are presumed to have annual moisture averages somewhere in between the averages of these two stations or about 15 to 18 inches. Table 2 shows the yearly moisture accumulations for the past 10-11 water years at each of the stations.

Table 2 - Water Year Precipitation and Crop Year Index

Year	Cedar Mesa (in inches)	Monument Springs (in inches)
1993	4.5^	6.1^
1994	9.4	22.5
1995	16.4*	33.2*
1996	11.5	21.7
1997	16.2*	27.7*
1998	16.3*	34.3*
1999	10.3	24.7
2000	7.0	25.8
2001	8.2	25.8
2002	9.9	25.3
2003	9.6	24.5

^ Incomplete. Only 3rd and 4th quarters totals.
*Above average precipitation.

3. Utilization

Table 3 shows use on grass species. Data is based on measuring grass plants at 4 to 9 transects in the Allotment. The data presented in Table 3 is not representative of the average use over the entire allotment. The average use for years 2001 and 2002 represents use taken in late fall or early winter. Data from 1979 is shown for historical purposes only.

Table 3 - Utilization Data

Year	Vegetation Community	Utilization	Average Utilization
1979	Native	20-60%	41%
1979	Crested seeding	10-59%	20%
2001	Native	12-56%	37%
2002	Crested seeding	31-64%	49%
2003	Native	56–59%	58%
2003	Native	22-23%	23%

4. Production

No production data is available for this allotment.

5. Condition and Trend

In August 1988, a majority of 21 long-term vegetation/soil cover monitoring study sites were established in the Antelope Spring allotment in cooperation with the permittee. Four of these study sites were established more recently, either in May 1990 or in June 1998 in response to fire rehabilitation seeding treatments. In accordance with the Minimum Monitoring Standards for BLM Rangelands in Idaho, the studies initiated may have included all or some of the methods such as nested plot frequency, percent ground cover, shrub density, and 3X3 plot data and site photographs.

Throughout the ten pastures in this relatively long and narrow allotment, at least two study sites are located in each pasture in either native shrub communities (12 sites) or in established seedings (9 sites). The 21 sites are situated in the following locations (site #), range sites, and elevations: (The 1990 sites are identified with a ^, and the 1998 sites with a *. All other sites are 1988 sites)

12S14E17; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,435 feet,
12S14E26; Artrw/Stth2, Loamy 8-10" native site @ 4,540 feet,
12S14E27; Artrw/Stth2, Loamy 8-10" native site @ 4,640 feet,
12S14E27A; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,650 feet,
12S14E28; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,660 feet,
12S14E33; Artrw/Stth2, Loamy 8-10", native site @ 4,750 feet,
13S14E02; Artrw/Stth2, Loamy 8-10", native site @ 4,875 feet,
13S14E11^; Artrw/Stth2, Loamy 8-10", native site @ 4,925 feet,
13S14E11A^; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,925 feet,
13S14E12; Artrw/Stth2, Loamy 8-10", native site @ 4,790 feet,
13S14E15; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,940 feet,
13S14E21*; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,970 feet,
13S14E23; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,960 feet,
13S14E25*; Artrw/Stth2, Loamy 8-10", now a seeding @ 5,150 feet,
14S14E03; Artrw/Stth2, Loamy 8-10", now a seeding @ 5,210 feet,
14S14E03A; Artrw/Stth2, Loamy 8-10", native site @ 5,205 feet,
14S14E21; Artrw/Agsp, Loamy 10-12", native site @ 5,380 feet,
14S14E21/22; Artrw/Agsp, Loamy 10-12", native site @ 5,375 feet,
14S14E27; Ararn/Stth2, Very Shallow Loam 8-12", native @ 5,490 feet,
15S14E16; Artrv/Feid, Loamy 16+", native site @ 6,760 feet, and
15S14E19; Artrv/Feid, Loamy 16+", native site @ 7,060 feet.

Since most baseline data was collected in 1988 or 1990, 19 of the 21 study sites have been revisited and data gathered at least once, in 1993, '94, '96 or '97, over the past 15 years. Trend is determined by comparing the frequency of key species and cover of the first year to subsequent years. The two fire rehabilitation sites established in 6/98 have not been revisited and can not be analyzed, therefore are not included in the following summary evaluation. The analysis and evaluation of long-term trend studies are summarized in Tables 4a and 4b.

Table 4a: Condition and Trend Evaluation of Native Vegetation Study Sites

1981-83 Inventory Site	Inventory Site Location	Trend Site	Vegetation Types	1981-83 Ecological Rating*	Trend
TH-35	12S14E16	12S14E26	Artrw/Stth2	Early	Static
TH-38	12S14E07	12S14E27	Artrw/Stth2	Early	Static
TH-38	12S14E07	12S14E33	Artrw/Stth2	Early	Static
TH-62	13S14E13	13S14E02	Artrw/Stth2	Early	Static
TH-62	13S14E13	13S14E11	Artrw/Stth2	Early	Static
TH-62	13S14E13	13S14E12	Artrw/Stth2	Early	Static
TH-62	13S14E13	14S14E03A	Artrw/Stth2	Early	Static
TH-71	14S14E22	14S14E21	Artrw/Agsp	Mid	Static
N/A		14S14E22	Artrw/Agsp	Mid	Static
TH-79	14S13E35	14S14E27	Ararn/Stth2	Early	Static
TH-74	14S14E16		Artrw/Brte	Early	
TH-72	14S14E28		Artrw/Agsp	Mid	
TH-83	14S14E34		Putr-Artrv/Stco4	Early	
TH-82	15S14E03		Artrv/Brte	Mid	
TH-85	15S14E09		Artrv/Feid	Late	
LH-117	15S14E20	15S14E16	Artrv/Feid	Late	Up
LH-118	15S14E17	15S14E19	Artrv/Feid	Late	Static

Table 4b: Condition and Trend Evaluation of Seeding Study Sites

1981-83 Inventory Site	Inventory Site Location	Trend Site	Vegetation Types	1981-83 Condition Rating*	Trend
TH-52	12S14E17	12S14E17	Agcr	Good	Down
TH-54	12S14E20		Agcr	Good	
TH-57	12S14E26		Agcr-Brte	Good	
TH-51	12S14E30		Agcr	Fair	
TH-50	12S14E32		Artrw/Agcr	Good	
TH-58	12S14E33	12S14E27A	Artrw/Agcr	Good	Static
TH-53	12S14E20	12S14E28	Agcr-Brte	Fair	Static
TH-49	13S14E04		Agcr	Good	
N/A		13S14E11A	Agcr	Good	Up
TH-66	13S14E10	13S14E15	Artrw/Agcr	Good	Static
TH-67	13S14E10		Agcr-Brte	Fair	
TH-65	13S14E14		Artrw/Agcr-Brte	Good	
TH-68	13S14E15		Chvi8/Brte	Poor	
TH-64	13S14E23	13S14E23	Artrw/Agcr	Good	Static
TH-63	14S14E03	14S14E03	Artrw/Agcr	Good	Static
TH-70	14S14E09		Artrw/Agcr	Excellent	

* Mid and Late condition ratings are based on best estimate depending on seeded species frequencies and shrub re-invasion densities. Condition was based on the vegetation inventories conducted in 1982-83. Jarbidge RMP referred to Range Condition as: Excellent, Good, Fair and Poor. Since that time these terms have been related to; Potential Natural Community, Late Seral, Mid Seral and Early Seral, respectively. Value

terms of excellent, good, fair, poor are only used as a value rating for areas rehabilitated with *Agropyron cristatum* and *Agropyron intermedium.*

Trend site summaries and evaluations have been completed for all of the study sites evaluated. These analyses are on file in the field office Allotment Study files and can be reviewed upon request.

In conclusion, of the 12 native vegetation study sites monitored in the Antelope Spring allotment, only two sites were potentially meeting the RMP objective of maintaining good or late-seral condition in that status. These particular Mountain sagebrush and Idaho fescue plant communities are indicating a positive "static to upward" trend. The other ten native sites are not meeting the RMP objective to improve lands in poor or fair ecological condition up one condition class. All these sites were initially rated as either poor or fair condition as based on the 1982-83 rangeland vegetation inventories. The RMP states that rangelands in poor condition are to be managed for improvement as an objective to all multiple use areas. The RMP further states that fair condition lands need to improve to good condition for sage grouse and other wildlife. For the most part, the native vegetative trends do not suggest or support overall improvement of most native range conditions in the allotment. Some native rangelands show slight improvement changes, but are static to down overall. None had clear upward trend indications, however.

The seven seeding study sites, as indicated by the table above, all were rated satisfactory with most sites being in good to fair condition and trend static. Good or fair condition ratings are based on shrub invasion (low to high densities) and frequency (low to high) of the seeded grass species. Overall, most seedings in the Antelope Spring allotment are being maintained in satisfactory (fair to good) condition as seedings and meeting the RMP objective for sustaining existing vegetative improvements.

Also note that all trend data collection and studies have been performed over an extensive time period (9 to 10 years) and throughout drought, average, and above average precipitation years.

B. Rangeland Health Assessment

In 2002, rangeland health data was gathered on the Allotment at 14 ecological sites within native range, and two ranges site with seedings. Rangeland health data was collected per Technical Reference 1734-6, *Interpreting Indicators of Rangeland Health*. The rangeland health data was collected by an interdisciplinary team for the purposes of making a quantitative assessment of the soil/site stability, hydrologic function, and the integrity of the biotic community for the various ecological sites.

Twenty-seven transects were read at various ecological sites and are identified as AS-1 to AS-27. The "Preponderance of Evidence" based on the 27 transects, is shown in Table 5.

The degree of departure or deviation from the potential ecological site description (None to Slight, Slight to Moderate, Moderate, Moderate to Extreme, or Extreme) is made based on an evaluation of the data. The 27 transects are identified as AS-1 to AS-27. Transects AS-5 and AS-6 were read in the Point Pasture and combined into AS-5/6 because they were taken in the same range site and the same section. Transect AS-22, aka AS-22-R, was taken in a reference site, i.e., a fenced exclosure in the Monument Springs Pasture.

Table 5 - Preponderance of Evidence

Attribute (The sites are considered meeting attributes if not mentioned)		Deviation From Potential				
		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil Site Stability Rationale: High amount of bare ground, soil mounds around shrubs, plant pedestalling, lack of or early seral biological crusts (BCs) (AS-5/6, 11, 25). Some rilling in relatively flat areas, terracettes evident, plant pedestals up to 3", deep-rooted perennial grasses limited (AS-13). Soil compaction, lateral root growth (AS -25). Debris dams, A horizon loss, compaction layer down to 6", Thurber's & bluebunch gone, most hits on Poa (AS 8, 9). One to 4" pedestals on plants & BCs, high bare ground, few BCs, low native herbaceous perennials (AS-14). High bare soil, soil surface pedon broke down rapidly, wind scouring evident post-burn, lacking BCs, poor plant/root penetration (AS-7, 12)	*Native*			AS-5/6, AS-11, AS-13, AS-17, AS-25	AS-8, AS-9, AS-14, AS-27	AS-1, AS-4, AS-15, AS-16, AS-18, AS-19, AS-20, AS-21, AS-22-R, AS-23, AS-24, AS-26
	Seeding			AS-7, AS-12	AS-10	AS-2, AS-3
Biotic Integrity Rationale: Poor herbaceous cover, low BCs, soil loss, N-fixing forbs low, climax grasses lacking, many dead grass plants (AS-24). Lack of BCs, bur buttercup very high amount, climax grasses lacking (AS-5/6, 11, 14). Bluebunch gone; most hits on Posa, compaction layer, knapweed, high amount cheatgrass (AS-9, 14, 16). Soil surface pedon dissolves quickly, many dead grasses, grass plants w/dead centers lacking climax grasses for site (AS-16). Lots of bur buttercup, halogeton, very low annual production (AS-7). Low organic in soil surface pedon, biomass low, AGCR reproduction low (AS-10).	*Native*		AS-24	AS-5/6, AS-9, AS-11, AS-14, AS-15, AS-16, AS-17, AS-21, AS-25	AS-1, AS-8, AS-13, AS-20, AS-23, AS-26, AS-27	AS-4, AS-18, AS-19, AS-22-R
	Seeding		AS-12	AS-7, AS-10	AS-2, AS-3	
Hydrologic Function Rationale: Wet season grazing leading to soil loss, 3 to 5" soil loss evidenced by hum mocking, largely herbaceous monoculture, lacking plants w/adequate cover, low litter amounts (AS-5/6). Soil movement, litter dams (AS-13). Native perennial grasses with low vigor, some grasses pulled up by roots (AS-21, 23). Poor plant root penetration (AS-7). No shrubs for snow capture and AGCR plants puny, low production (AS-12, 10).	*Native*			AS-5/6, AS-13, AS-26	AS-1, AS-8, AS-9, AS-11, AS-21, AS-23, AS-25, AS-27	AS-4, AS-14, AS-17, AS-18, AS-19, AS-22-R, AS-24
	Seeding			AS-7, AS-12	AS-10	AS-2, AS-3, AS-15, AS-16, AS-20

1. Standard 1 – Watershed

Many of the sites sampled for this Standard showed a moderate deviation from expected. There was a high amount of bare ground, soil mounds around shrubs, plant pedestalling, and lack of or early seral biological crusts. Also noted were some rilling in relatively flat areas, evident terracettes, pedestals up to 4", and deep-rooted perennial grasses and native perennial forbs were limited. *Poa* was the dominant native grass at some sites. Soil compaction and lateral root growth was also present at some sites, as were debris dams, A horizon (topsoil) loss, and poor soil surface resistance to erosion. Wind scouring was evident at a post-burn site which also lacked biological soil crusts and had poor plant root penetration.

2. Standard 2 - Riparian Zones and Wetlands and Standard 3 - Stream Channel/Floodplain

The following principal stream reach (Table 6) is present in the Antelope Springs Allotment.

Table 6 - Stream Reach Functionality Rating

Stream (year inventoried/ monitored)	Inventory Reach #	Miles	Dominant Vegetation	Functionality Rating	Comments
Bear Creek 1997, 2003	5.4 – 5.8	0.4	*Poa*/Hairgrass/ *Glyceria*/Potr	FAR Functional at Risk	channel is actively eroding

There is a protective fence around the spring at the head of Bear Creek at segment 6.3 (on private land), with two small ponds located in the creek below the springs, which affect downstream flows into Bear Creek.

Bear Creek segment 5.4 to 5.8 is fenced and cattle do not use this portion of the creek. However, sheep trail through this area under the permit issued to Guerry, Inc.

Bear Creek segment 5.4 to 5.8, is not stable vertically or laterally. The channel is downcut and stream banks are largely uncovered and unstable. Although there are some boulders and large wood present to help dissipate water energy, the stream banks are bare and raw and subject to further erosion. Further downcutting can also be expected. A high energy flow earlier this year deposited gravel on the floodplain and carried large wood downstream. Some sections of Bear Creek are aggrading and in one location the active channel has relocated itself. Three springs along this segment of Bear Creek are flowing into the channel; otherwise, this stretch of Bear Creek is dry.

Although there are not many sedges or rushes occupying this stretch of Bear Creek, some mature willows are present, as well as a good component of herbaceous wetland species such as tufted hairgrass (*Deschampia caespitosa*) and fowl mannagrass (*Glyceria striata*). With continued downcutting and loss of stream banks, it can be expected that the water storage capacity of this system will decrease and upland-type species will

encroach the area. Sagebrush is currently growing to the edge of the stream bank in many places. Although livestock trailing is present, use along the creek in 2003 was light.

3. Standard 4 - Native Plant Communities

A total of 22 sites in native areas were evaluated on 14 different range sites. Specific range sites evaluated were: loamy 8-10", silt loam 9-11", shallow stony 10-12", loamy 8-12", loamy 10-13", cobbly loam 10-13", sandy loam 10-12", very cobbly loam 12-15", very cobbly loam 15-20", extremely gravelly loam 15-20", very cobbly sandy loam 16-20", very/extremely gravelly loam 20-25", very gravelly loam 20-25", mountain mahogany savannah 16-22", and aspen woodland 16+". Data for the sample areas in native sites are grouped by range site.

At the loamy 8-10" range site sagebrush cover was 20 and 16 percent at sites AS-1 and AS-8, whereas average sagebrush height was 19.6 and 23.6 inches respectively. Sandberg bluegrass was the most abundant grass at both sites (22 percent AS-1; and 27 percent AS-8). Bottlebrush squirreltail was the next most common grass 7 percent AS-1 and 4 percent at AS-8. Thurber needlegrass, which should be the dominant late seral grass, was recorded at trace amounts 0.5 percent at AS-1. Average grass height was 5.2 and 5.9 inches for AS-1 and AS-8. Perennial native forbs provided an average of 0.5 percent and 3.5 percent cover at AS-1 and AS-8, respectively. At both sites members of the genus *Phlox* were the most common forb hit. Native annual forbs were present in low amounts (0 percent AS-1 and an average 0.5 percent AS-8). Bare ground is 10 and 12 percent respectively for AS-1 and AS-8. Biological soil crust provides 48 percent (AS-1) and 49 percent (AS-8) ground cover, with much of it associated with vegetation. Exotic species, cheatgrass and bur buttercup, were present at both sites (average 1 percent at AS-1 and 2 percent AS-8). Both exotic annuals were rather widespread, but fairly sparse.

Site AS-25 was in the silt loam 9-11" range site. Sagebrush cover was 13.3 percent with an average sagebrush height of 20.0 inches. Several of the sagebrush exhibited moderate use and damage. The only native grass present was Sandberg bluegrass, but provided 12 percent cover. Thurber needlegrass should have been the dominant late seral grass species with some bottlebrush squirreltail. The average grass height was 6.0 inches in an ungrazed condition. Native forbs had 3.3 percent cover with annual forbs averaging 1.3 percent cover. Bareground was relatively high, averaging 34.7 percent cover, with 5.3 percent biological crusts. Exotic annuals were quite abundant (14 percent cover), with bur buttercup and cheatgrass being common species present.

Site AS-4 is located in the shallow stony 10-12" range site. Two species of sagebrush were present, black sagebrush and Wyoming big sagebrush. Total sagebrush canopy cover is 24 percent. The average height of sagebrush is 27.2 inches. Sandberg bluegrass averages 22 percent with bottlebrush squirreltail providing 3 percent cover. The majority of the squirreltail is protected by sagebrush. No Thurber needlegrass was intercepted (hit) on any transects. Even though this was a rest pasture, average grass height is 6.1 inches. Perennial native forbs provide about 5 percent cover with most of the cover being *Phlox*. Native annual forbs average 0.5 percent. Bare ground averages nearly 8.5 percent,

whereas biological soil crusts are at 53.5 percent. Exotic annuals average 3 percent canopy cover, with a mix of cheatgrass and bur buttercup being present.

The loamy 8-12" range site contains four evaluation areas, AS-5, AS-6, AS-9, and AS-11. Two of the areas (AS-5 and AS-11) are in old burns where some crested wheatgrass had been seeded. Sagebrush cover varies from a low of 7 percent (AS-5) to high of 21 percent (AS-9). At site AS-6 sagebrush was 12 percent canopy cover with another 16 percent canopy cover of rabbitbrush. AS-11 contains a sagebrush canopy of 11 percent with another 2 percent rabbitbrush. The average sagebrush height was 23.9, 19.2, 21.0, 18.4 inches for sites AS-5, AS-6, AS-9 and AS-11, respectively. Sandberg bluegrass was the most common native grass at each site at 18 percent, 30 percent, 20 percent, and 30 percent. Bottlebrush squirreltail was present in low amounts (1 percent and 1.5 percent) at AS-5 and AS-9. The late seral grasses, bluebunch wheatgrass and Thurber needlegrass, which should be dominant, were not hit on any transects at any of the four sites evaluated. At sites AS-5 and AS-11, crested wheatgrass provides 4 percent and 9 percent cover, respectively. Average grass height ranges from a low of 2.3 inches (AS-6), to 4.9 inches (AS-11), to 5.3 inches (AS-5), and a high of 6.7 inches (AS-9). The native forb component is very limited at AS-5 and AS-6 (0 percent) and AS-11 (1 percent). At AS-9 native forbs provide an average of 3.5 percent cover per transect. The most common forb is *Phlox*. Bare ground is greatest at AS-5 with 39 percent, AS-6 with 36 percent, AS-11 with 16 percent, and lowest AS-9 with 10 percent. Biological soil crusts provide the most cover at AS-9 (25 percent), and lowest cover (12 percent) at AS-5. Exotic annuals are present at all the sites evaluated in this range site. Cover by exotic annuals is as follows: 2 percent (AS-9), 4 percent (AS-5 and AS-6), and 5 percent (AS-11). Bur buttercup and cheatgrass were the exotic annuals hit.

In the loamy 10-13" range site two evaluation areas were sampled. Sagebrush cover is 6 percent at AS-13 and 16.5 percent as AS-14. Sagebrush height is 23.0 inches and 19.5 inches, respectively. At both evaluation areas Sandberg bluegrass contributes 16 percent cover at both areas. Bottlebrush squirreltail provides 1 percent (AS-13) and 4 percent (AS-14) cover. AS-13 was part of an old seeding. At this site crested wheatgrass is 10 percent cover. Bluebunch wheatgrass, which is the dominant late seral species, did not provide any cover along transects at either area. Average grass height at both sites is less than 7 inches (6.9 inches AS-13 and 5.6 inches AS-14). The lower grass heights at AS-14, reflects the lack of taller grass species. Native perennial forbs are 2 percent and native annual forbs are 2 percent (AS-13) and 5 percent and 1 percent, respectively at AS-14. At AS-13 biological soil crust cover is 28 percent whereas bare ground is 32 percent. Much of the biological crusts were under the plant canopy. Biological soil crust cover is 17 percent and bare ground is 28 percent at AS-14. Cover provided by exotic annuals was 8 percent and 16 percent at the two sites. Bur buttercup was the most common exotic annual present. This species is widespread and abundant.

Two areas (AS-15 and AS-16) were evaluated in the sandy loam 10-12" range site. Sagebrush canopy averages 13 percent (AS-15) and 18 percent (AS-16) cover. The average height of sagebrush is 31 inches at AS-15, and 28.7 inches at AS-16. Rabbitbrush provides 3 percent canopy cover at site AS-15. Total perennial native grass

cover is 15.4 percent at AS-15 [Sandberg bluegrass 13.3, bluebunch wheatgrass, thickspike wheatgrass, and Indian ricegrass at 0.7 percent each] and 27.3 percent at AS-16 [Sandberg bluegrass 18 percent, bluebunch wheatgrass 4 percent, Thurber needlegrass 3.3 percent, and bottlebrush squirreltail 2 percent]. The average grass height at both sites exceeds 7 inches (7.5 AS-15; 9.3 AS-16). Neither area had been grazed in 2003. Perennial native forb cover is around 2 percent at both sites, with phlox and onion being fairly common. Native annual forbs provide 4 percent cover at AS-15, whereas, native annual forbs are only 0.7 percent cover at AS-16. Bare ground is 44 percent at AS-15 and 30 percent at AS-16. Biological soil crusts cover is 7.3 percent at AS-15 and 10 percent at AS-16. Exotic annuals are widespread and abundant at both sites (5.3 percent AS-15, and 10 percent AS-16). Cheatgrass was more abundant at AS-16, whereas, bur buttercup was more common at AS-15.

Site AS-18 is located in the cobbly loam 10-13" range site. Sagebrush canopy cover is 12 percent, with rabbitbrush and broom snakeweed providing another 7.3 percent canopy cover. The average height of sagebrush is 20.9 inches. The most abundant grass is Sandberg bluegrass (23.3 percent) followed by bluebunch wheatgrass (10 percent), and bottlebrush squirreltail (2 percent). Prior to grazing the average grass height is 10.4 inches. Perennial native forbs averaged 10.7 percent. Although several annual native forbs are present, they provided no cover along transects. Bare ground is 18 percent. Biological soil crust cover is low at 10 percent with much of the cover under vegetation. The rocky nature of the site helped to reduce biological soil crusts. Exotic annuals are fairly widespread and contribute 4.7 percent ground cover. Bur buttercup and cheatgrass are the most common exotic species present.

Two evaluation sites (AS-17 and AS-20) were located in the very cobbly loam 12-15" range site. Sagebrush provides 18.3 percent and 15 percent canopy cover at AS-17 and AS-20, respectively. Average sagebrush height is 18.8 inches (AS-17) and 13.4 inches at AS-20. The shorter average sagebrush height at AS-20 was due to the greater amount of low sagebrush hit at this site. Total grass cover at AS-17 is 31 percent and 30 percent at AS-20. Sandberg bluegrass is the most common grass at both sites (26 percent AS-17 and 14 percent AS-20). Idaho fescue and bluebunch wheatgrass is less at AS-17 (Feid 0.7 percent; Agsp 3.3 percent) than AS-20 (Feid 6 percent; Agsp 9 percent). The average grass height is taller at AS-20 (12.7 inches) compared to AS-17 (5.9 inches). Height is influenced by the amount of the shorter growth form of Sandberg bluegrass. Native perennial forbs provide 3 percent cover at AS-17 and 16 percent cover at AS-20. The amount of cover by annual native forbs is similar at both sites about 3 percent. Biological soil crusts are 9 percent at AS-17 and 17 percent at AS-20. The majority of the biological crusts were under vegetative cover. Biological soil crusts are naturally limited in rocky range sites. Bare ground was 21.7 percent at AS-17 and 12 percent at AS-20. Bare ground does not include rock or gravel. Cover by exotic annuals was 9 percent at AS-17 and 3 percent at AS-20. The exotic annuals most frequently hit were cheatgrass and bur buttercup.

Site AS-19 is located in a very cobbly sandy loam 12-15". Total shrub canopy cover is nearly 32 percent, of this sagebrush canopy was 15 percent. Other shrubs included

antelope bitterbrush (8.5 percent) rabbitbrush (6 percent), broom snakeweed (1.5 percent) and Utah serviceberry (0.5 percent). Average sagebrush height at AS-19 is 27.5 inches. Total grass cover is 36 percent. The most common grass is Sandberg bluegrass (13.5 percent) followed by Idaho fescue (7.5 percent), needlegrasses (7 percent), bluebunch wheatgrass (4 percent) and thickspike wheatgrass (4 percent). Grass height average is 15.4 inches before grazing. Cover produced by perennial native forbs is 15.5 percent with another 5 percent by annual native forbs. Biological soil crusts are 10 percent cover with bare ground at 11.5 percent. Exotic annual cover, primarily cheatgrass, was 8.5 percent.

AS-24 is located in an extremely gravelly loam 15-20" range site. Total shrub cover at this site is about 15 percent, of which 11.3 percent canopy cover is low sagebrush. Other shrubs are broom snakeweed, and rabbitbrush. Total grass cover is 34 percent, mostly Sandberg bluegrass (26 percent) with lesser amounts of bottlebrush squirreltail (4 percent), Idaho fescue (2 percent) and bluebunch wheatgrass (2 percent). Height of the grasses averages 4.8 inches with much of the grazing season remaining. Native perennial forb cover is 10.7 percent with phlox, sandwort and lupine along transects. Native annual forb cover is 2.7 percent. Biological soil crusts provide 12 percent cover. The majority of the biological crusts are under vegetation. Bare ground was 13.3 percent. Exotic annuals are sparse

Two sites (AS-21 and AS-22) were used to evaluate the very/extremely gravelly loam 20-25" range site. Of these AS-22 was located in an exclosure near Monument Springs that has been in place for nearly 40 years. Sagebrush canopy cover is 17.5 percent (AS-21) and 21 percent (AS-22). The average sagebrush height is 14.7 inches (AS-21) and 18.0 inches (AS-22). Some of the difference in height was due to more low sagebrush encountered along one of the transects in AS-21. Total grass cover is 37.5 percent at AS-21, but 62 percent at AS-22. Idaho fescue was the most common grass at both sites, but more abundant within the exclosure (AS-21 32 percent; AS-22 59 percent). Sandberg bluegrass provides less cover (6 percent AS-21; 2 percent AS-22), whereas, bottlebrush squirreltail and bluebunch wheatgrass contribute 1 percent or less cover in AS-21. The only other grass providing cover in AS-22 was needlegrass. Grass height averages 6.9 inches at AS-21, and 13.0 inches as AS-22. The amount of native perennial forb cover is 12 percent (AS-22) and 16 percent (AS-21). Although annual native forbs provide 3 percent cover at AS-21, they provided no cover at AS-22. It should be noted that a number of annual forbs are present at AS-22. Biological soil crusts contribute 3 percent cover at AS-21 and 21 percent cover at AS-22. The amount of bare ground is more at AS-21 (13 percent) compared to AS-22 (3 percent). No cover is provided by exotic annuals along transects at either site. Cheatgrass was noted along the main road in the general area.

AS-23 is in a very gravelly loam 20-25" range site. Much of this range site is in an area where run off from a snow pillow influences the vegetation. Additionally, a portion of the area burned in a wild fire. Sagebrush cover is only 2.7 percent and averages 25.0 inches. Total cover from grass is 62 percent (42 percent Idaho fescue, 9.3 bluegrass, 6 percent needlegrass, 3.3 percent bluebunch wheatgrass, and 1.3 percent basin wild rye.

Average grass height was 11.6 inches prior to the end of the grazing season. Native perennial forb cover is 12 percent, whereas, native annual forb cover is 1.3 percent. Biological soil crusts are 4 percent, and bare ground is 13.3 percent. No exotic annuals did not produce any cover along transects.

AS-27 is located in a mountain mahogany savannah 16-22" range site. Canopy cover of shrubs is 26 percent with mountain snowberry (12 percent), mountain big sagebrush (8 percent), antelope bitterbrush (4 percent) and Utah serviceberry (2 percent). Canopy coverage of mountain mahogany is estimated to be around 15 percent. Perennial native grasses provide 8 percent cover (Idaho fescue 6 percent, mountain brome 2 percent). Perennial native forb cover is 6 percent. Native annual forbs are not found on the transect. Biological soil crusts provide 2 percent cover, and bare ground is 10 percent.

AS-26 is in an aspen woodland 16+" range site. Mountain snowberry provides 10 percent canopy cover and wax currant (2 percent) is also present. Grass cover totals 30 percent, with Kentucky bluegrass the most common grass present and a slight amount of mountain brome (2 percent). Grass height following grazing is estimated to be 2 inches. Native perennial forbs do not provide any cover, although some forbs are present. Forbs observed included mullein and bull thistle. Bare ground is present 22 percent. Canopy cover of the aspen overstory was not recorded. Browsing on young aspen suckers is common (60 percent) and nipping on chokecherry is at 100 percent.

An exclosure is present around Monument Springs that is used as a reference area for the aspen woodland 16+" range site. Livestock use within the fenced area has been very limited for the past 30+ years. Mountain snowberry contributed 24 percent canopy cover, followed by mountain big sagebrush with 2 percent cover. Wood rose and chokecherry are also present, but the transect did not intersect their canopy. Grass cover is 58 percent, and would have been higher expect for leave litter. Kentucky bluegrass provides 22 percent cover, followed by Columbia needlegrass (20 percent), a wheatgrass (10 percent) and mountain brome (6 percent). Native forbs also provide some cover; nettle-leaf horsemint (2 percent) and Douglas silene (2 percent). The only bare ground observed within the aspen stand was due to burrowing animals and bare ground is limited to 0 percent on the transect. Aspen suckers, rose, and chokecherry are not browsed.

Crucial winter range and general winter range have been identified in this allotment. Antelope and mule deer fawn in native habitat. Elk have been observed in the allotment as a result of the increasing elk herd in Nevada. Aspen stands are important habitat for mule deer and elk fawning. Mountain mahogany, mountain shrublands, and sagebrush steppe habitats provide winter habitat for elk, mule deer, and antelope.

4. Standard 5 - Seedings

Five sites classified as seedings were evaluated in two range sites: a loamy 8-10" (AS-2, AS-3, and AS-7) and loamy 8-12" (AS-10 and AS-12). Sagebrush cover varies from 1 percent to 6 percent in the seedings on the loamy 8-10" range site. Rabbitbrush is present at the 3 sites evaluated and varies from 1 to 4 percent cover. Sandberg bluegrass is the most common native grass (AS-2 15 percent; AS-3 21 percent; AS-7 19 percent cover)

and was the only native grass hit at all three sites. Thurber needlegrass, which should be the dominant late seral grass species for this range site, was not hit on any of the cover transects. Crested wheatgrass, the seeded species, provides 19 percent (AS-2), 14 percent (AS-3) and 17 percent (AS-7) cover. Native forbs were not hit at the three sites. Bare ground is 13 percent (AS-2), 18 percent (AS-3), and 20 percent (AS-7), whereas, biological crust cover varies from a high of 22 percent (AS-3) to a low of 19 percent (AS-2). Exotic annuals compose 21 percent (AS-2), 10 percent (AS-3) and 19 percent (AS-7) of the cover. The most common exotic species hit were cheatgrass and bur buttercup.

In the loamy 8-12" range site of the two sites, sagebrush was present only at AS-10, with 3 percent canopy cover for sagebrush and 1 percent cover for rabbitbrush. Sagebrush height averages 23.3 inches tall. Grass canopy cover at site AS-10 are Sandberg bluegrass 23 percent, bottlebrush squirreltail 1 percent, Thurber needlegrass 1 percent, bluebunch wheatgrass 1 percent and crested wheatgrass 15 percent. Grass cover at AS-12 has less Sandberg bluegrass 9 percent, the same amount of bluebunch and squirreltail as AS-10, and slightly more crested wheatgrass (17 percent). Although native perennial forbs are 4 percent cover at AS-10, no perennial forbs provide cover at AS-12. The amount of bare ground at both sites is elevated, 32 percent AS-10 and 30 percent at AS-12. Biological soil crusts are low at both sites with 7 percent and 4 percent respectively for AS-10 and AS-12. Exotic annuals are 7 percent and 10 percent cover at AS-10 and AS-12, respectively.

5. Standard 6 – Exotic Plant Communities, Other Than Seedings
Not Applicable.

6. Standard 7 - Water Quality
The three main perennial surface waters associated with the Antelope Spring allotment include Salmon Falls Creek (3 miles below the dam), Lower Cedar Creek (4 miles below the dam), and about ½ mile of Bear Creek in the far upper reaches of the allotment. Two other notable but ephemeral streams include Timber Canyon and Rocky Canyon creeks. However, these creeks only flow during ground recharge peaks and spring runoff periods.

Of the major water bodies, the Idaho Department of Environmental Quality (DEQ) has identified and nominated the segment of Salmon Falls Creek from the dam to the Snake River and the lower segment of Cedar Creek from Roseworth to Salmon Falls Creek as "water quality limited". Both creeks are included on the 1996-98 303(d) lists in Hydrologic Unit Code (HUC) #17040213 for concerns of **nutrients, sediments, DO**, **pathogens** and **flow alterations**, however severity of these concerns were rated as low for both creeks. Neither one of these creek segments have been water quality monitored by the BLM mainly for the reason that there is no livestock access into these creeks from the allotment because the canyon rims form the allotment boundary around the complete northern end.

None of the other mentioned creeks have been listed as water quality limited by DEQ, nor have they been intensely monitored by the BLM. The only water quality monitoring that has been done were two single day recordings in Bear Creek on August 29, 1997 and

July 7, 2000. On neither occasion was any water quality criteria exceeded. A summary of the recorded data follows:

Date	Time	Water Temp.	DO (mg/l)	% DO	pH	Spec. Cond	TDS (g/l)	Nit. (mg/l)	Total Phos	Fecal Colif	Flow (cfs)
8/97	10:15	7.4 C	8.02	66.9	6.85	44.0	.028	.4	.03	120	1/3
7/00	11:35	10.3 C	8.80	87.7	7.15	30.5	.019	-	-	-	¼

Although monitoring data is very limited for Bear Creek, it appears to be meeting the temperature, pH, DO, and fecal coliform standards for the beneficial uses of a cold water biota and a secondary recreational stream. The main reason for this assumption is that the stream is directly fed by springs and is well covered with forested canopy along its entire stretch. Also, livestock do not have access to this creek in the Antelope Spring allotment thus eliminating any moderate to high coliform counts or other concerns that may be generated by livestock impacts.

The two other ephemeral creeks in the allotment that flow during the spring and early summer periods are Timber Canyon and Rocky Canyon Creeks as mentioned above. Both creeks originate as snow melt in the higher elevations of the allotment, but are spring fed in lower segments outside the allotment. Early in the year, decent water volumes (about a cfs or less annually) flow in these creeks due to snow melt, however by July they taper off to trickles or completely dry up. Neither of these creeks are now used for watering livestock because the permittee recently fenced them out of the allotment to preclude any riparian or water quality problems. Also, since these creeks are basically ephemeral in nature, this may preclude them from making DEQ's 303(d) list and is the reason why the BLM has not monitor them. However, DEQ has monitored both of these creeks in 2002 and they will be assessed for the 2004 303(d) list. Currently, Timber Canyon Creek appears to be meeting the cold water biota beneficial use, but Rocky Canyon Creek is not meeting the secondary contact recreation beneficial use due to exceeding the *E. coli* geometric mean.

Additionally, there are a few other open waters within the allotment consisting mainly of small springs and ponds. The quality of these waters have not been monitored or is known by the BLM except for the high volume spring known as Antelope Spring, the allotment's name sake. The BLM has done some very periodic and limited monitoring of this spring and have found it to be meeting State standards. This monitoring data is retained in a Field Office WQ file and can be reviewed upon request.

For most of the allotment, the water for livestock use is distributed throughout much of the northern and southern areas by means of pipelines and troughs. The source for these pipeline systems either comes from Antelope spring on public land or a well on private land. The quality of the private well is not monitored by the BLM because of its private land status, but it is assumed to be of high quality since it comes directly from a ground source.

7. Standard 8 - Threatened and Endangered Plants and Animals

A number of species presently designated as Sensitive species are present in the allotment. For the most part, the allotment has not been inventoried for sensitive species including raptors, woodpeckers or songbirds. Sensitive species occurrences are frequently from incidental observations. BLM has no information regarding whether or not pygmy rabbits are present or were historically present in the Antelope Springs Allotment. A limited bat inventory has been conducted in this allotment. Also a number of wildlife species presently designated as "watch" are also present. Watch species are **not** presently designated as Sensitive species, but may be added to the sensitive list in future years. The only plant species on the Idaho BLM sensitive known to occur in the Antelope Springs Allotment is Simpson's hedgehog cactus. Only limited surveys for sensitive plants have been conducted in this allotment and more species may occur. It appears that the standard is being met for the special status plant species known from the allotment. Impacts from livestock have either been described as "slight", or they have not been reported or observed at some of the plant locations. All the above mentioned species are shown in Table 6.

Table 6 - Idaho BLM Sensitive and Watch species in the Antelope Springs Allotment

Common Name	Scientific Name	Status	Presence
Greater sage grouse	*Centrocercus urophasianus*	S	C
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	S	C
Mountain quail	*Oreotyx pictus*	S	H
Prairie falcon	*Falco mexicanus*	S	C
Ferruginous hawk	*Buteo regalis*	S	C
Loggerhead shrike	*Lanius ludovicianus*	S	C
Brewer's sparrow	*Spizella breweri*	S	C
Sage sparrow	*Amphispiza belli*	S	C
Spotted bat	*Euderma maculatum*	S	C
Lewis woodpecker	*Melanerpes lewis*	S	C
Northern goshawk	*Accipiter gentilis*	S	L
Calliope hummingbird	*Stellula calliope*	S	L
Townsend big-eared bat	*Corynorhinus townsendii*	S	L
Swainson's hawk	*Buteo swainsoni*	W	C
Wilson phalarope	*Phalaropus tricolor*	W	C
Short-eared owl	*Asio flammeus*	W	C
Western burrowing owl	*Speotyto cunciularia*	W	C
Sage thrasher	*Oreoscoptes montanus*	W	C
Green-tailed towhee	*Pipilo chlorurus*	W	C
Brewer's blackbird	*Euphagus cyanocephalus*	W	C
Cassin's finch	*Carpodacus cassinii*	W	C
Red-naped sapsucker	*Sphyrapicus nuchalis*	W	C
Western pipestrelle	*Pipistrellus hesperus*	W	C
Western small-footed myotis	*Myotis ciliolabrum*	W	C
Yuma myotis	*Myotis yumanensis*	W	L
Grasshopper sparrow	*Ammodramus savannarum*	W	L
Virginia's warbler	*Vermivora virginae*	W	L
Cordilleran flycatcher	*Empidonax occidentalis*	W	L
Simpson's hedgehog cactus	*Pediocactus simpsonii*	S	C
Slickspot peppergrass	*Lepidium papilliferum*	S	L
Status codes: S = designated Sensitive species; C = FWS candidate species; W = Watch category Presence codes: C = presence confirmed in allotment; L = presence likely in the allotment; H = historic, likely extirpated			

Greater sage grouse. There are 9 leks identified within the allotment and another 13 leks within 2 miles of the allotment. Sage grouse numbers are generally down in the area (Table 7). Sagebrush communities serves as winter and nesting habitat for many of the sage grouse remaining in the general area. Sage grouse nesting potentially occurs in

areas with adequate sagebrush cover (10-30%). Plant communities where Sandberg bluegrass, bottlebrush squirreltail, and Thurber needlegrass are grazed to 40% use level will not provide adequate residual vegetation for nesting sage grouse from 0.5 miles or more from water.

Table 7 - Numbers of male sage grouse at leks in or near the Antelope Springs Allotment for which there was data.

Lek #	# Males	Year of Recent Count	High # Males	Year of Count
2T-13	0	1999	15	1971
2T-14	0	2002	23	1999
2T-19	0	1995	10	1971
2T-20	0	2000	90	1951
2T-21	9	2000	9	2002
2T-22	0	1999	42	1961
2T-23	0	2002	8	1965
2T-24	0	1998	10	1965
2T-25	15	2002	46	1951
2T-26	0	2000	2	1958
2T-28	0	2000	49	1961
2T-29	0	2000	10	1952
2T-32	0	2000	13	1951
2T-101	8	2002	18	1998
2T-111	18	2002	25	1998
2T-132	18	2002	38	1996
2T-137	0	1995	3	1982
2T-142	0	2000	13	1992
2T-150	10	2002	13	1997
2T-156	10	2002	23	1998
2T-161	0	2000	98	1967
2T-164	4	2002	4	2002
Lek # in bold type are in the Antelope Springs Allotment				

Columbian sharp-tailed grouse. Radio marked Columbian sharp-tailed grouse were documented using the mountain shrub lands in the central and southern portion of this allotment. Mountain shrub communities with chokecherry and serviceberry as well as aspen stands provide important winter habitat for sharp-tailed grouse.

Mountain quail. Mountain quail were historically present in several canyons in the area. They are believed to have been extirpated in the 1970's.

Prairie falcon. Prairie falcons have been observed in the Antelope Springs Allotment. Cliffs along Salmon Falls Creek, a portion of Cedar Creek and China Mountain provide suitable nesting habitat for this species.

Northern goshawk. Northern goshawks have been observed in the allotment. This species may nest in aspen patches with suitable sized trees or seen foraging.

Ferruginous hawk. Ferruginous hawks have been observed within the allotment, however, no nest sites have been documented to date.

Loggerhead shrike. Loggerhead shrikes have been observed in areas with tall sagebrush in the lower elevations of this allotment.

Brewer's sparrow and sage sparrow. Both sparrow species have been observed in the allotment. Brewer's sparrow nests were found while doing cover transects.

Spotted bat. This species has been observed along Salmon Falls Creek canyon and in the uplands.

Calliope hummingbird. This hummingbird species has been observed in aspen stands associated with springs and is likely present within the allotment.

Lewis woodpecker. Lewis woodpecker have been found nesting in aspen stands that have large diameter trees.

Townsend big-eared bat. Townsend big-eared bat have been documented in Salmon Falls Creek canyon on the Snake River Field Office area. This species is likely present in this allotment.

1Simpson's hedgehog cactus. Fourteen populations of this small, barrel cactus are known to occur in this allotment. It is found primarily on gravelly soils in low sagebrush/Idaho fescue plant communities. Threats to this species are primarily from collection of plants from the wild, but fire, habitat degradation, and trampling from livestock also impact this species.

Slickspot peppergrass. Slickspot peppergrass is not known to occur in this allotment, however, over 2711 acres of suitable habitat does occur. Threats to this species include degradation of slickspots and surrounding area habitat, trampling from livestock, weed invasion.

C. Guidelines for Grazing Management

Per the *Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management* the following Guidelines need to be implemented to promote significant progress toward the Standards:

> Guideline 1 – Use grazing management practices and/or facilities to maintain or promote significant progress toward adequate amounts of ground cover.

Guideline 3 – Use grazing management practices to maintain or promote soil conditions that support water infiltration, plant vigor, and permeability rates and minimize soil compaction appropriate to site potential.

Guideline 4 – Implement grazing management practices that provide periodic rest or deferment during critical growth stages to allow sufficient regrowth to achieve good plant vigor and adequate vegetative cover.

Guideline 8 – Apply grazing management practices that maintain or promote the interaction of the hydrologic cycle, nutrient cycle, and energy flow that will support the appropriate types and amounts of soil organisms, plants, and animals appropriate to soil type, climate, and landform.

Guideline 9 – Apply grazing management practices to maintain adequate plant vigor for seed production, seed dispersal, and seedling survival of desired species relative to soil type, climate, and landform.

Guideline 12 – Apply grazing management practices and/or facilities that maintain or promote the physical and biological conditions necessary to sustain native plant populations and wildlife habitats in native plant communities. (Not all of the water troughs have functional wildlife escape ramps. A few pastures have 4 strand fences with high top wires which impedes the movement of wintering mule deer and pronghorn.)

Guideline 13 – On areas seeded predominantly with non-native plants, use grazing management practices to maintain or promote the physical and biological conditions to achieve healthy rangelands.

V. Conclusions

All indicators for the applicable Standards for Rangeland Health are not being met in the allotment for standard 1 (Watershed), Standard 2 (Riparian areas and Wetlands), Standard 3 (Stream channel/floodplain), Standard 4 (Native Plant Communities), Standard 5 (Seedings), and Standard 8 (Special Status Species). Livestock grazing management guidelines are not being met.

There is no data on number of deer or antelope utilizing the habitat in the Antelope Springs Allotment. Portions of the allotment were classified as crucial and general mule deer winter range. The allotment contains year round and crucial antelope winter range. The native habitat is used as fawning habitat and winter cover for antelope. Aspen stands are important fawning habitat for mule deer and elk. Mountain shrub and aspen habitats are important areas wintering areas for Columbian sharp-tailed grouse.

Sage grouse are known to utilize the native areas during the winter. Crested wheatgrass provides limited habitat for some species, but can provide suitable habitat to grassland species. Some grassland species prefer large blocks of grassland habitat (7 to 10 inches tall). Sensitive wildlife species seen in the Allotment include sage sparrow, Brewer's

sparrow, loggerhead shrike, spotted bat, ferruginous hawk, prairie falcon, northern goshawk, sage grouse, Columbian sharp-tailed grouse, Lewis woodpecker, and Columbian spotted frog.

VI. Consultation

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Sheri Hagwood, Botanist
Clare Josaitis, Natural Resource Specialist
John Ash, NRS – Climate, Monitoring and WQ
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VII. Recommendations

Maintain 5965 AUMs of permitted grazing use.

Place salt and mineral supplements ¼ mile from water and native vegetation communities where possible.

Reduce utilization levels of 50% on native grass species and 60 to 65% on crested wheatgrass to 40% and 50%, respectively.

Discontinue year-round livestock use within the allotment and implement season-of-use as described in current term permit.

Pasture fences should be set to BLM specifications (3 strand barbed wire spacing for pronghorn with bottom wire smooth).

Provide water in troughs from May through October for wildlife, even though livestock are not present in specific pastures. Ensure that all troughs have properly installed and functioning wildlife escape ramps.

Spray diffuse knapweed in pastures where this noxious weed is found.

No salting in areas with Simpson Hedgehog cactus or within 0.25 miles of Salmon Falls Creek Canyon to protect cultural resources.

Conduct Ecological Site Inventory of those acres previously determined to be in poor condition to quantify current status. Seed or plant native shrubs, grasses and forbs into poor condition range sites and rest as necessary to ensure establishment. This would result in improvement of poor condition range.

Maintain up to 15,130 acres of existing vegetative improvements.

Increase (seed/plant) important browse species (antelope bitterbrush and four-wing saltbush) in mule deer and antelope winter range.

Add a management guideline to limit browsing on chokecherry, serviceberry, and aspen to improve shrubs and aspen in aspen and mountain shrub habitats.

Schedule grazing to avoid livestock use on browse in crucial big game winter range.

Schedule grazing to reduce soil compaction, impacts to the soil surface, and biological crusts.

Schedule grazing to minimize livestock affects during sage grouse strutting.

> *Note: 50% use on key woody species is not allocated to livestock. Use is expected to be low except for during the winter if snow covers herbaceous vegetation. Winter range is identified in this allotment.